

They wriggled within the gelatinous envelope prior to making their way out to the surface. The gills were club-like, with a small knob-like inner gill, followed by another with three branches. The silvery spots on the body, which are distinctive, and to which attention was drawn by Annandale and Rao, appear on the third day after hatching, by which time the external gills are lost and the labial teeth visible. Development is rapid and the young toad on metamorphosis measures less than 10 mm. The young are light brown in colour with darker marblings centred with pale pink. These colours are lost by the time they attain a size of 30 mm.

This species is listed as *Bufo andersoni* in Boulenger's Fauna (p. 504). Annandale (*Rec. Ind. Mus.* 3: 283-284, 1909) held that this was identical with *stomaticus* Lutken described from an unknown locality in 1862.

It has been recorded from Arabia and over the whole of northern peninsular India, as also Rajshahi in Eastern Bengal, Purneah and Lucknow. In *JBNHS*, 27: 126, 1920, Narayan Rao described a new race *peninsularis* based on 2 specimens from Coorg. The differences were relative and not confirmed by Boulenger. The examination of 23 fresh specimens (12 males and 11 females) from Bombay ranging from 34 mm. to 59 mm. in length confirms that the differences between *stomaticus* and *andersoni*, as also those said to separate the southern form *peninsularis*, are all covered by the individual variations exhibited in this species.

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HUMAYUN ABDULALI

NATURAL HISTORY MUSEUM,
DARJEELING, WEST BENGAL.
June 28, 1956.

J. C. DANIEL,
Curator

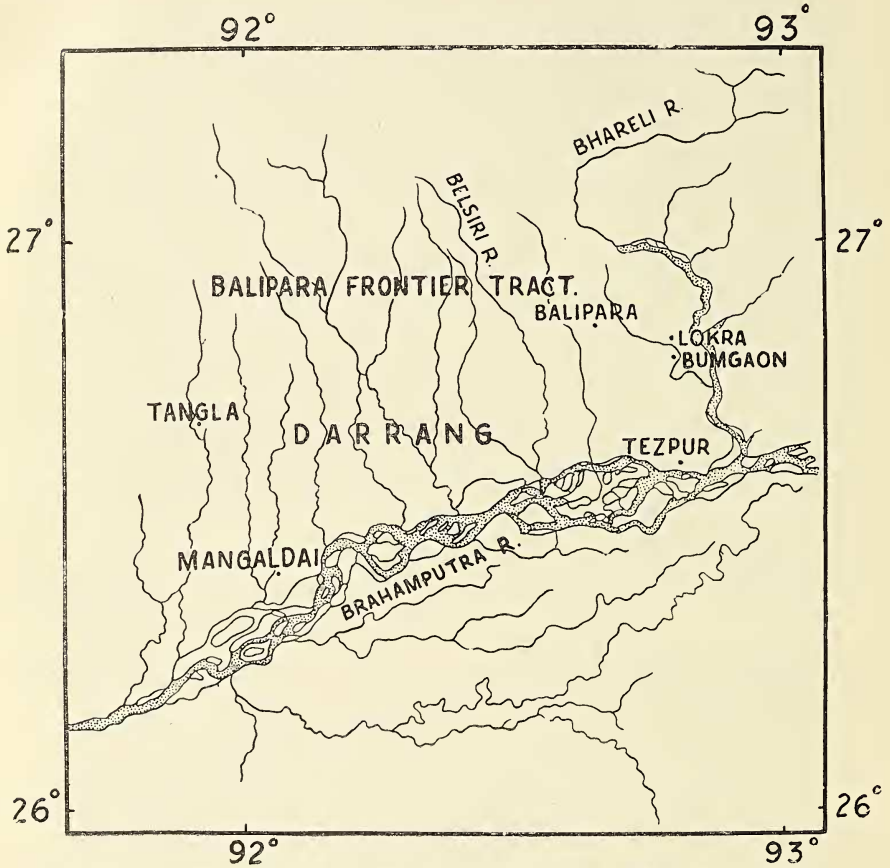
23. ON A COLLECTION OF FISH FROM ASSAM

(With a text map)

The State of Assam lies on the north-eastern border of Bengal and forms the north-east frontier State of India. It comprises the Valley of the Brahmaputra and the mountainous watershed which feeds the river and its tributaries. Except on the west it is shut in by jungle-covered ranges or lofty mountains. From east to west it is traversed by the main Brahmaputra River, and the strips of land along each bank of the great river are intersected by numerous minor streams. From the geographical point of view the Assam Plateau cannot be affiliated to the Peninsula, but geologically there would appear to be a proper connection since the prevailing rocks are closely similar. The study of the fish fauna of the region shows several interesting features, suggesting that it served as the route for the Malayan element to migrate into Peninsular India, during the Tertiary era.¹

¹ Hora, S.L., *Proc. Nat. Inst. Sci. India*, XV (8) : 309-310.

In November 1939 Drs. B. Prashad and S. L. Hora visited Darrang District and Balipara respectively and made a collection of fish in rivers, streams, ponds, borrowpits, lakes etc. of this region of Assam. The



Sketch map of the region in which collection was made.

largest river in this region is the Bhareli, which rises in the Aka Hills and enters the district just to the north of Bhalukpong. It first flows east between the ranges of the hills and then turns sharply to the south and takes a tortuous course to the Brahmaputra, which it joins about 7 miles east of Tezpur town. In addition to the Bhareli River there are numerous other rivers which carry off the drainage of the hills into the Brahmaputra. Besides these, there are a few bhiils (lakes) like Kenduguri Bhil and Soni Gaon Bhil of fairly large size. These bhiils are shallow pools of no great extent which collect in depressions in the lower parts of the district generally near the Brahmaputra. Almost the whole of the region consists of alluvial deposits of clay and sand in varying proportions, ranging from pure sand near the Brahmaputra to a clay so stiff that it is quite unfit for cultivation,

In the collection under report, there are altogether 70 species and of these four, i.e., *Setipinna phasa* (Hamilton), *Nemachilus savona* (Hamilton), *Glyptothorax rebeiroi* (Hora) and *Doryichthys deocata* (Hamilton) have been recorded from this region for the first time. In the accompanying table, the species are listed with their respective places of collection in Assam, and their general distribution.

I am indebted to the late Dr. S. L. Hora, Director, Zoological Survey of India, for placing the material at my disposal and for his constant guidance and encouragement. My thanks are also due to Shri A. G. K. Menon, Assistant Zoologist, Zoological Survey of India, for helping me during the investigation.

Name of species	Locality in Assam	Further Distribution
Family : NOTOPTERIDAE		
1. <i>Notopterus chitala</i> (Hamilton)	Mangaldai (Darrang Dist.).	India to Malay Archipelago.
2. <i>Notopterus nctopterus</i> (Pallas)	Mangaldai.	India, Burma and further East.
Family : ENGRAULIDAE		
3. <i>Setipinna phasa</i> (Hamilton) ...	Tezpur Fish Market (Darrang Dist.).	Orissa, Bengal, Cachar and Burma.
Family : CLUPEIDAE		
4. <i>Gadusia chapra</i> (Hamilton) ...	Mangaldai & Tezpur Fish Market.	Widely distributed in India; absent south of the Kistna.
Family : CYPRINIDAE		
Sub-family : ABRAMIDINAE		
5. <i>Chela bacaila</i> (Hamilton) ...	Tangla (Darrang Dist.)	Throughout India (except Malabar) and Burma.
6. <i>Chela gora</i> (Hamilton) ...	Tangla & Tezpur Fish Market.	Sind, throughout Northern India and Assam.
Sub-family : RASBORINAE		
7. <i>Barilius bola</i> (Hamilton) ...	Mangaldai & Tezpur Fish Market, Tangla.	Orissa, Bengal, North West Province, Assam and Burma.
8. <i>Barilius barila</i> (Hamilton) ...	Lokra (Balipara Frontier Tract).	Delhi, North West and Central Provinces, Bengal, Orissa and Lower Assam.
9. <i>Barilius bendelisis</i> (Hamilton)	Lokra	Throughout India, not recorded from coast of Malabar.
10. <i>Barilius tileo</i> (Hamilton)	Tangla.	Bengal and Assam.
11. <i>Danio (Danio) dangila</i> (Hamilton)	... Lokra.	Bengal, Bihar, Himalayas at Darjeeling, also the hills above Akyab.

Name of Species	Locality in Assam	Further Distribution
Sub-family: RASBORINAE—(cont.)		
12. <i>Danio (Danio) devario</i> (Hamilton) ...	Tangla.	Throughout India.
13. <i>Danio (Brachydanio) rerio</i> (Hamilton) ...	Tezpur.	Throughout India and Burma.
14. <i>Esomus danvicus</i> (Hamilton)	Tezpur and Mangaldai.	India, Ceylon, Burma and the Nicobars,
15. <i>Rasbora elarga</i> (Hamilton) ...	Mangaldai and Tezpur.	Bengal, Assam and Burma.
16. <i>Rasbora rasbora</i> (Hamilton)	Lokra.	India, Assam, Burma and Penang.
Sub-family: CYPRININAE		
17. <i>Amblypharyngodon mola</i> (Hamilton)	Tezpur Fish Market and Tangla.	Throughout India (except Malabar) and Burma.
18. <i>Aspidoparia morar</i> (Hamilton)	Tezpur Fish Market.	All over Northern India, Assam and Burma.
19. <i>Puntius chagunio</i> Hamilton ...	Tangla and Lokra.	Bengal, Bihar, Assam, NW. Provinces and Punjab.
20. <i>Puntius chola</i> Hamilton ...	Lokra.	Throughout India and Burma to Mergui.
21. <i>Puntius phulunio</i> Hamilton ...	Mangaldai.	Ganjam, Orissa and throughout Bengal and Burma.
22. <i>Puntius sarana</i> Hamilton ...	Tezpur Fish Market, Mangaldai, Tangla and Lokra.	India and Burma.
23. <i>Puntius sophore</i> Hamilton ...	Tangla and Mangaldai.	Throughout India, and Burma as high as Mandala- lay.
24. <i>Puntius ticto</i> Hamilton ...	Tezpur Fish Market, Tez- pur and Tangla.	Ceylon, India, Burma and also Siam.
25. <i>Puntius tetrapagus</i> Mc- Clelland	Tangla and Mangaldai.	Orissa, Bengal, Assam, NW. Provinces, Punjab and Sind, also the Deccan.
26. <i>Puntius titius</i> Hamilton ...	Lokra.	Orissa, Bengal, Assam, NW. Provinces, Pun- jab and Sind. Also the Deccan.
27. <i>Catla catla</i> (Hamilton) ...	Tezpur Fish Market.	India, Burma and Siam.
28. <i>Cirrhina mrigala</i> (Hamilton)	Mangaldai.	India and Burma.
29. <i>Cirrhina reba</i> (Hamilton) ...	Tezpur Fish Market and Mangaldai.	Throughout India.
30. <i>Labeo angra</i> (Hamilton) ...	Tezpur Fish Market.	Assam, Bengal, Orissa and Burma.
31. <i>Labeo bata</i> (Hamilton) ...	Tangla, Tezpur Fish Market and Lokra.	Orissa, Bengal and Assam.
32. <i>Labeo boga</i> (Hamilton) ...	Tezpur Fish Market and Lokra.	Rivers of the Gangetic Provinces, Madras and Burma.
33. <i>Labeo calbasu</i> (Hamilton) ...	Mangaldai.	India and Burma.
34. <i>Labeo dero</i> (Hamilton) ...	Tangla and Lokra.	Delhi, Sind, Bengal and Assam.
35. <i>Labeo dyocheilus</i> (McClelland)	Lokra.	Sind, Bengal and Assam.
36. <i>Labeo gonius</i> (Hamilton) ...	Mangaldai and Tangla.	India and Burma; absent south of the Kistna.
37. <i>Labeo rohita</i> (Hamilton) ...	Mangaldai.	India and Burma.

Name of Species	Locality in Assam	Further Distribution
Family : COBITIDAE		
38. <i>Lepidocephalus guntea</i> (Hamilton)	Tezpur and Tangla.	Ceylon, India and Burma.
39. <i>Nemachilus botia</i> (Hamilton)...	Tangla and Lokra.	Ceylon, India and Burma.
40. <i>Nemachilus savona</i> (Hamilton)	Lokra.	Darjeeling Himalayas.
Family : CLARIIDAE		
41. <i>Clarias batrachus</i> Linnaeus ...	Tezpur Fish Market.	India, Burma and further east.
Family : HETEROPTNEUSTIDAE		
42. <i>Heteropneustes fossilis</i> (Bloch)	Mangaldai and Tezpur Fish Market.	Ceylon, India, Burma and Cochin-China.
Family : SILURIDAE		
43. <i>Callichrous macrophthalmus</i> (Blyth)	Tezpur Fish Market.	Madras, Assam and Burma.
44. <i>Wallago attu</i> (Bloch and Schneider)	Mangaldai and Tezpur Fish Market.	India, Burma and Ceylon.
Family : CHACIDAE		
45. <i>Chaca chaca</i> (Hamilton) ...	Lokra.	Bombay, Brahmaputra, Ganges and Irrawady.
Family : SCHILBEIDAE		
46. <i>Ailia coila</i> (Hamilton) ...	Mangaldai and Tezpur Fish Market.	Throughout India.
47. <i>Clupisoma garua</i> (Hamilton)	Mangaldai.	Sind, all over Northern India, Assam and Burma.
48. <i>Eutropiichthys vacha</i> (Hamilton)	Mangaldai and Tezpur Fish Market.	Punjab, Sind, Bengal, Orissa, Burma and Siam.
Family : BAGRIDAE		
49. <i>Mystus (Mystus) cavasius</i> (Hamilton)	Mangaldai, Tangla and Tezpur Fish Market.	Throughout India and Burma.
50. <i>Mystus (Osteobagrus) seenghala</i> (Sykes)	Tezpur Fish Market.	Punjab, U. P., Delhi, Bengal and Burma.
51. <i>Mystus (Mystus) vittatus</i> (Bloch)	Tezpur Fish Market.	Throughout India, Burma, Siam and Ceylon.
Family : SISORIDAE		
52. <i>Glyptothorax rebeiroi</i> (Hora)	Tangla.	Tista drainage, Darjeeling Himalayas, Kosi River, Bihar and Riband River, Vindhya Pradesh.
53. <i>Gagata viridescens</i> (Hamilton)	Tezpur Fish Market.	Rivers of Bengal, Delhi, Assam, Poona in the Deccan.

Name of Species	Locality in Assam	Further Distribution
Family : CYPRINODONTIDAE		
54. <i>Parchax panchax</i> (Hamilton)	Mangaldai.	India, Assam and Burma.
Family : MUGILIDAE		
55. <i>Mugil corsula</i> (Hamilton)	Tezpur Fish Market.	Common in the larger rivers of India.
Family : BELONIDAE		
56. <i>Xenentodon cancila</i> (Hamilton)	Tezpur Fish Market.	Ceylon, India, Burma and further east.
Family : SYNGNATHIDAE		
57. <i>Doryichthys deodata</i> (Hamilton)	Tangla.	Bengal and Bihar.
Family : CHANNIDAE		
58. <i>Channa gachua</i> (Hamilton)	Tangla.	India, Burma, Ceylon and the Andamans.
59. <i>Channa marulius</i> (Hamilton)	Tangla.	Ceylon and India to China.
60. <i>Channa punctatus</i> (Bloch)	Mangaldai and Tangla.	Throughout India, Burma and Malaya.
Family : ANABANTIDAE		
61. <i>Anabas testudineus</i> (Bloch)	Mangaldai and Tangla.	Ceylon, India, Burma and further east.
Family : PERCIDAE		
62. <i>Ambassis nama</i> (Hamilton)	Tezpur Fish Market.	India and Burma.
63. <i>Ambassis ranga</i> (Hamilton)	Tezpur Fish Market, Tangla and Lokra.	India, Burma and Siam.
Family : OSPHRONEMIDAE		
64. <i>Colisa chuna</i> (Hamilton)	Tezpur and Tangla.	Bengal and Assam.
65. <i>Colisa fasciatus</i> (Bloch and Schneider)	Mangaldai, Tangla and Tezpur.	India and Burma.
Family : GOBIIDAE		
66. <i>Glossogobius giuris</i> (Hamilton)	Tezpur Fish Market.	India, Burma and further east.
Family : NANDIDAE		
67. <i>Badis badis</i> (Hamilton)	Lokra.	India and Burma.
68. <i>Nandus nandus</i> (Hamilton)	Mangaldai and Tezpur Fish Market.	India, Burma and Siam.

Name of Species	Locality in Assam	Further Distribution
Family : M A S T A C E M B E L I D A E		
69. <i>Mastacembelus pancalus</i> (Hamilton)	... Tangla.	Large rivers of India and localities near sea. Common in the deltaic regions of N. India.
70. <i>Rhynchobdella aculeata</i> (Bloch)	... Tezpur Fish Market.	

The majority of the species are fairly well known and widely distributed and do not call for any special remarks. Some remarks are, however, made on the following :

Setipinna phasa (Hamilton)

1822. *Clupea phasa*, Hamilton, Fish. Ganges, pp. 241, 382, pl. ii, fig. 72.

1878. *Engraulis telara*, Day, Fish. India, p. 627, pl. C1 viii, fig. 2.

1953. *Setipinna phasa*, Misra, *Rec. Ind. Mus.*, L, p. 384, fig. 6a.

In the collection under report *Setipinna phasa* is represented by a single specimen, about 11.2 inches in total length, purchased from Tezpur Fish Market.

It is distributed in Orissa, Bengal, Cachar and Burma.

Nemachilus savona (Hamilton)

1822. *Cobitis savona* Hamilton, Fish. Ganges p. 357.

1935. *Nemachilus savona* Hora, *Rec. Ind. Mus.*, XXXVII, p. 56, pl. iii, figs. 3 and 4.

A single specimen of *N. savona* was caught in Bhareli River about 2 miles below Lokra.

Hora gives the distribution of the species as 'the foot of the Darjeeling Himalayas at Sevoke and Siliguri'.

Glyptothorax rebeiroi (Hora)

1921. *Laguvia rebeiroi*, Hora, *Rec. Ind. Mus.*, XXII, p. 741, pl. xxix, fig. 3.

1954. *Glyptothorax rebeiroi* Menon, *Rec. Ind. Mus.*, LII, p. 27.

Hora, in his paper referred to above, distinguished *Laguvia* from *Glyptothorax* only in the possession of humerocubital and scapular processes, the presence of bony tubercles on the sides of the body and in the absence of a well marked adhesive thoracic apparatus. Menon, on examination of the collections of *Glyptothorax*, proposed to merge *Laguvia* Hora into the synonymy of *Glyptothorax* Blyth.

In Dr. Hora's collection there are 8 specimens of *G. rebeiroi* caught in streamlets of Tangla.

The distribution of the species is as follows: Tista drainage, Darjeeling Himalayas, Kosi River, Nepal, Himalayas, Morel River, Santal

Parganas and Kamala River, Darbhanga District; Bihar and Rihand River, Vindhya Pradesh.

Doryichthys deocata (Hamilton)

1822. *Syngnathus deocata* Hamilton, Fish. Ganges, pp. 114, 363.

1877. *Doryichthys deocata* Day, Fish. India, P. 680.

The only specimen under report was caught in streamlets of Tangla, Darrang Dist.

Day recorded the species from Bengal and Bihar.

ZOOLOGICAL SURVEY OF INDIA,
CALCUTTA,
December 29, 1955.

K. L. SEHGAL.

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24. A RECORD OF THE SUN-FISH, *RANZANIA TRUNCATA* (RETZIUS) NEAR BEYPORE, MALABAR COAST

(With a photo)

On 14 February 1956 one female specimen of *Ranzania truncata* was captured by the local fishermen from the shallow waters near Beypore, seven miles south of Calicut. It showed all the typical characters of the species, such as oblong body twice as long as deep, smooth and tessellated skin and truncate caudal. The fish measured 61 cm. in length and 30 cm. in width. The dorsal fin was 17 cm. high and 6.5 cm. at base; and had 17 rays. Anal was 15 cm. long and 6 cm. at base; and had 18 rays. Pectoral was 10.5 cm. high and 3 cm. at base; and had 13 rays. Eyes were 3.5 cm. in diameter. Skin was 1 cm. thick. Mouth-opening was terminal, oval in shape and 3.5 × 1.5 cm. in size. Alimentary tract was a straight tube 115 cm. in length, and contained digested mucilaginous matter. Ovary was single-lobed, 22 × 6.5 cm. in size and 220 grams in weight; and contained 14 lakhs eggs.